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California GARDEN

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AUG.-SEPT.
Vol. 54, No. 4
1963

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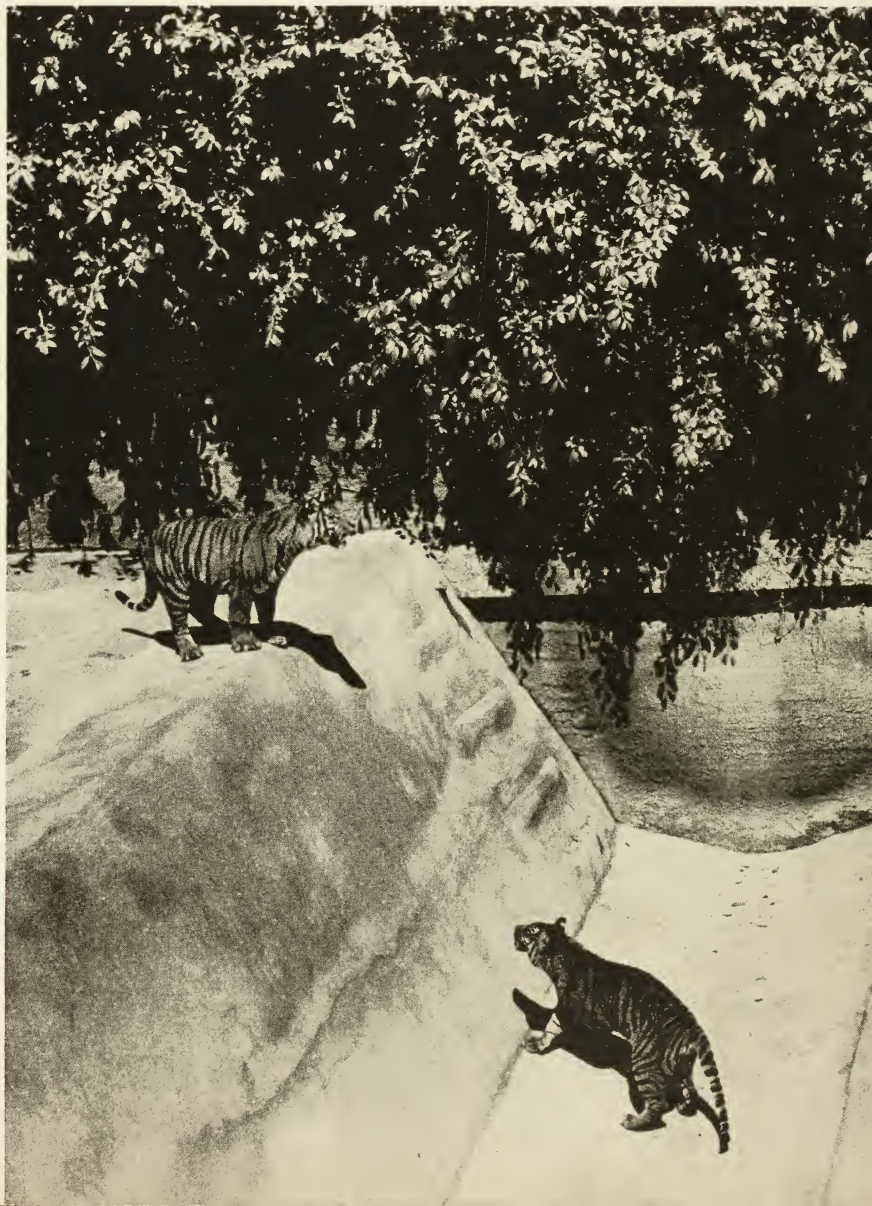

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COVER STORY

About our cover: Photographer R. Van Nostrand has captured two Siberian Tigers beneath a Creeping Fig, *Ficus pumila varimina,* providing an excellent symbol of the third installment of the plant tour through the San Diego Zoo. Chauncey I. Jerabek, the San Diego Tree Man, took a walking tour through the world-famous zoo and examines all of the excellent plantings from around the world.—All Photos in article San Diego Zoo Photos

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AUGUST-SEPTEMBER, 1963
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Remember your August-September garden chores

Before going on to the fun part of gardening, let's talk about the plant pests that are in their element these mid-summer months.

Most of us have been impressed, or depressed, by "Silent Spring", but that is no excuse for reverting to a helpless do-nothing attitude. Rachel Carson's book has proved a great blessing because it has caused the gardener to think carefully about the spray materials he may use, and the manufacturers to look for less dangerous chemicals. The latter have done just that. There is a new product that does all that was claimed for DDT, without the harmful results.

We must face the fact that the balance of nature was upset when we scraped our hillsides for subdivision lots and cleared the native chaparral for garden crops. Nothing we do today is very natural, so it behooves us to make the most of all sensible aids for survival. There would be less need for pesticides if we developed a quicker hand and eye for prompt control.

Smite the enemy at the beginning, before he becomes a devastating horde that overwhelms you and your neighbor. Go out into the garden with magnifying glass and give the adversaries a close-up inspection—you will marvel at their variety, complexity and even beauty.

First let's consider the suckers, who attack the plant juices. They could be called the pests' navy, as they seem to come from above and below. In warm weather, mites and thrip seem to beset everything from trees to violets, with shrubs like pyracanthas, myrtles, eugenias and berry canes in between. Tiny spider mites of various colors cause leaves to be dull, webby or discolored. Fortunately there is a safe and effective miticide, Kelthane. Thrips are minute black slivers that distort flowers and silver the leaves. For them we must resort to Malathion, the least toxic spray in its class, but it must be used with care.

ANTS ATTRACTED

Many sucking insects excrete a honeydew that is attractive to ants and is often conducive to fungus. Eliminate the ants first, as they take care of these insects. There are many colors of aphis, usually found on soft new growth.

The little green pest that jumps is a leafhopper, who leaves a dotted appearance on the underside of the foliage. He is also a carrier of virus and blight—a Typhoid Mary of the plant world.

White flies are prevalent around pelargoniums. They make a cloud in the air when you try to spray them. Their nymphs suck on the backs of the leaves. Mealy bugs are suckers too. They favor shade plants. Look in the crevices of leaves where they lay their eggs in cottony-white nests, also full of lively little white crawlers.

Scale insects, with or without their shells, are moving

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around on plant stems right now and right now is the time to smite them.

Those little lumps on chrysanthemum leaves are made by midges. They do not suck, but penetrate the tissues to lay their eggs. Pick off the leaves if there are not too many, and spray both plant and ground. Next season set out fresh plants in a new location.

Malathion is the answer to most of these suckers, perhaps in a multipurpose combination, and, in the case of scale, with a summer oil to smother them.

CHEWERS TAKE ALL

Next come the CHEWERS, who could be the army, because they move right along taking everything in sight. In their many forms, from the big hornworm to the sod webworm, they are the most unpleasant marauders of summer. Stalk the big ones to their lairs as if on an Indian tiger safari and pluck them off with well-sheathed fingers. Early catches stem the tide. We won't discuss all types of worms, but we must add snails and slugs to the chewing list. The good tidings here is a brand new spray for all these chewers that is not harmful to people or pets. It kills snails only as they eat the sprayed foliage but does not attract them. Fortunately there is a snail bait that contains no arsenate and plenty of "come hither".

MILDEW AND RUST

Finlly there is a range of blights from mildew and rust to virus and fungus. They must be the marines of the pest world because they seem to land first before you can spot them. There are good fungicides to defeat them, if you start before the enemy closes in. Proper use of water to keep the leaves clean washes off many pests and if watered very early, so the leaves dry off before the sun hits them it may prevent mildew and sunburn.

Plants will be healthier if sidewalks and pavings are hosed down on hot days inland to maintain humidity but don't wet the leaves until it is cooler.

If plant leaves show yellow between the veins apply iron chelates, dry or liquid. Don't give an overdose and water well at once. Spray to kill crab grass before seed forms. Watering ranks with "pesting" these months. Be SURE it gets down to the roots and conserve it with a mulch.

HAPPIER CHORES

Divide daylilies, agapanthus, shasta daisies, coral bells and violets in August. Madonna lilies should be separated right after blooming. Plant them 2 inches deep in rich soil and partial shade. If iris are not already replanted (see June-July issue) get some new varieties and do it now. Would that someone would organize an iris study group! If leaves are brown, dig gladiolus, dry in the shade and store in peat moss.

Late in September, thin trees against wind damage. Don't prune tropical shrubs as it will promote tender new growth. Cut out old berry canes.

Take cuttings of Orchid Cactus in August. Let slips dry a week or so, then tie them up against sticks so the ends just barely touch the ground. Do not water until roots start. Geraniums, fuchsias and pelargoniums make good cuttings in September. Remove only the lower leaves on six-inch slips of Martha

garden chores . . .

Washingtons. Give chrysanthemums last pinching in early August. For large flowers, disbud in September. Fertilize until color shows in buds. Stake the tall ones and NEVER neglect the watering.

FERTILIZERS

Use fertilizer with less nitrogen for tender shrubs such as hibiscus and gardenias. Promote new growth before cool weather by fertilizing everything else, except deciduous fruit trees, in August. Give citrus trees a heavy feeding. Lawns need a fast-acting fertilizer. Vegetables started in August will benefit from warm days. Soak turnip seed before planting. Root crops need more nitrogen and phosphoric acid than other crops. At this time it is better to buy starts of the cabbage family in ponies. Find a warm spot for seedling tomatoes, eggplant and peppers. Never overwater tomatoes after they are established. If you want to crow over your neighbors get peas in early, for a Christmas crop.

In August prepare the soil for bulb planting. Go down at least a foot deep. Add bonemeal and leafmold, water well and turn it over to get in good tilth. Sweetpea beds should be dug at least 16 inches deep. Incorporate six inches of dairy fertilizer plus superphosphates in the bottom of a trench and cover with six inches of soil. Let water run in furrows each side of the trench. Ventilation is better on a trellis away from a wall. It would seem more sensible to plant sweetpeas in September for January bloom, when Christmas colors are out of the way and there is more time to enjoy

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them. Buy Winter Spencer varieties. Flood the trench the day before planting so there is plenty of moisture and do not water again until the plants are up and then only in the furrows. Space seeds at least one-inch apart and cover with two inches of soil. Fill in the earth as the plants grow. This gives a cool root run. Cover against birds and bait for snails. Thin plants to six inches apart.

PLANTING TIME

September is planting time for early bulbs. Snowflakes do better than snowdrops in California. Put early freesias on the north side, narcissus anywhere. Ranunculus should be rooted, points down, in flats of sand before planting out. Cover with brush or netting, to protect them from the birds. Tulips may be purchased late this month. Store in ventilated plastic bags, in refrigerator, for six weeks.

Some annuals require longer to mature than others. If they set buds before nights hit 50 degrees, they will bloom in winter, otherwise they will wait until spring. Alyssum, candytuft, pansies and violas are among those that require only 30 days. Allow two months for calendula, iceland poppy and stock. Snapdragons take five months. This timing will let the gardener decide whether to buy seeds or transplants.

Before making up planting beds, ask your nurserymen about a new lignin material that is highly recommended by agricultural experts. It promotes drainage by keeping clay and rock particles apart, while retaining water and nutrients. This product serves the same purpose as humus, from which it is made. It has the advantage of being already broken down with fertilizer added, so it can go to work at once. It functions effectively over a period of 10 years, which saves the gardener's time and energy plus promoting better plants. Dig up the beds and incorporate fertilizer and humus where the new annuals and perennials will go in September. Shade new transplants in the heat of the day. Plant stock where it will not suffer from wet feet.

HIGH COLOR

Summer gardens continue in high color. It is not too late to plant trees and shrubs that take your eye. In fact it is the best time to select bougainvillea, hibiscus, flowering eucalypts, crepe myrtle, oleander and ginger, while you can see the bloom. Take a look at the big *Tipuana tipu* that Miss Sessions planted long ago in Pacific Beach, on Garnet, just off Highway 101. Buy a tree if you have room. The Firewheel tree at State College is showing off its gaudy blooms. It is hard to grow but certainly worth a try. The spectacular pink popcorn balls on the Dombeya tree will make you forget the few disheveled months that are to follow. Princess Flower startles newcomers with its brilliant purple blooms. Plant more Durantas. Their big bushes are like lavender waterfalls and later they sport fine sprays of yellow berries.

Japanese iris is almost past, but the tiny orchid Epidendrum, that grows so well in the open ground, may be selected in several colors. White flowers of Francoa and Japanese Anemonoe show well at night, while the night-blooming cereus scents the air. Grassy Liriope sends up purple exclamation points now. When water strikes clumps of lavender Angelonia, they smell like apples. Tops among succulents are the fiery blooms on *Crassula falcata.*

Vines with red trumpets, passion flowers and the unusual one that looks like blue hydrangeas, *Solanum wendlandii* are all around. Don't plant the latter where the sharp thorns will intrude. The Rosa-de-Montana vine twines its rosy pink wreaths over many fences — best in warm spots, dormant in winter.

WILDFLOWER CATALOG

1963 WILDFLOWER AND WILD TREE SEED CATALOG lists over 700 of the best varieties, 50c. Scientific name — common name — informative — artistic, **CLYDE ROBIN**, P. O. Box 2091, Castro Valley, California.

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New Product for this County

According to daily newspaper reports the enterprising West Indian Gardens Company, of Altadena, have planted a tract of forty-two acres at Vista, this county, to alligator pears. The land was purchased from the Vista Land Company, after a careful investigation of every section of the State as to the adaptability to pear culture. They have invested about $50,000 in land and young trees. They expect the trees will be bearing 100 pears per tree in four years.

August 1913

I flew back to my shade in a chastened mood and found another soothing potion awaiting me on my pet bench, this was a copy of Dean Hole's "A Book About Roses." I read it at one sitting and forgot my troubles, and ever since I have been going back again over it all, and now I recommend it anybody who has August garden nostalgia. It matters not whether you grow roses or even care much about them or not, this book will prove delightful reading. One word of warning, if you do not grow roses and do not want to, be very careful, for these pages contain a power to inoculate the rose fever that few can resist. It was written years ago, before most of our today roses were evolved, but that does not matter a particle. The charm of the writer, who knew and loved his subject with the whole of a great big soul, is absolutely irresistible. Get in the shade and read "A Book About Roses."

(Editor's note: *A Book About Roses by Dean Hole* is in print. It can be obtained from the American Rose Society or the National Rose Society of Great Britain or the State Library. Jean Kenneally, rosarian, owns the book and reports that it has great charm.)

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California Garden

AUGUST - SEPTEMBER, 1963

good dahlias speak for themselves, but it helps to know the language

By LARRY SISK

LOOK into a bed of dahlias and if a good one is there it will stand out.

Try it on seedlings. You will walk straight to the best flower.

Or, on standard varieties; the prize winners will be head and shoulders above all the rest.

The good ones are always spectacular. Colorful. Breathtaking.

Take the word of R. Paul Comstock if you don't have the opportunity to test it yourself. Comstock knows.

He has been growing dahlias in San Diego County for 35 years. During all that time he has been planting and spotting the outstanding seedlings, growing them, exhibiting them, and shipping them all over the world.

Comstock started out as an amateur just like millions of other gardeners, but the lure of new varieties caught him quickly and hung on until now he is one of the most famous dahlia growers the world over.

His seedlings and his ability to recognize them brought him fame in the field of exhibition dahlias.

He is known best for about half a dozen real winners, and in the last ten years for three world-famous ones:

Lula Pattie, a huge white semi-cactus, currently the big favorite for largest and best-of-show wherever dahlias are exhibited.

First Lady, a medium-sized yellow formal with petals that fold back and interlace to give the appearance of a glowing ball.

Florence Chadwick, named for the San Diego swimmer, an eight-

R. PAUL COMSTOCK IS SO FLUENT

R. Paul Comstock in 1959, holding the best bloom of the San Diego show, a variety called Surprise.

inch straight cactus with white petals blushing lavender at the tips.

When Florence Chadwick was introduced ten years ago it immediately became the standard for that type of dahlia, and it became such a winner that dahlia specialists everywhere started asking about its San Diego grower.

Unknown

Until then he was practically unknown, although his seedlings had been accorded many honors since his Aztec Chief won several national medals in 1940. There was the great Sir Galahad in 1945, and the still-famous Miss San Diego of 1946. Other winners that still are current and much sought after are Miss Liberty, a red and white bicolor introduced in 1947; Stardust and Autumn Glory, both introduced in 1950; Mars in 1953, and Maureen Connolly in 1954.

First Lady was introduced in 1955 and probably has been the top dahlia winner all over the world in the last five years.

Comstock thinks First Lady is the best he's had, but also believes that Lula Pattie, introduced in 1960, won't be far behind. The latter was the big winner in all shows last year—distinctive because of its great depth of bloom, almost equal to its 12- to 15-inch diameter.

Standouts

All of these famous dahlias are proof of Comstock's theory about standouts in the seedling bed.

"I remember Aztec Chief in a big planting of seedlings on the back of the lot when we lived on 35th Street in San Diego," he said. "The garden was about 65 feet from the back door. When I went to the door early one morning there was that big tomato-red bloom in the middle of bed—head and shoulders above all the rest.

"I said to myself, 'There's a flower!'

"It had color—the greatest attribute of dahlias.

"It was distinctive. Although there were a hundred seedlings blooming in the garden, that one stuck out like a sore thumb."

Anyone can spot the good ones, he said.

"You can walk through them four rows at a time, with a thousand plants blooming, and you will see that one good dahlia immediately," Comstock said. "It will look you right in the face. It will have color, the stem will be strong and erect, and it will have good form."

First Bloom

The first blooms in any garden always look good, Comstock said.

"Then, one day there will be a bloom of extra quality standing out," he said. "Even if a person doesn't know anything about dahlias he will recognize it and say to himself that that's a nice one over there.

"It's just like recognizing the qualities of a thoroughbred horse, or a prize-winning animal or bird of any kind."

Comstock recalled that sudden-recognition experience with a bloom of Black Monarch—the famous original "black" dahlia—a number of years ago. He knew as soon as he saw the fully-opened bloom that "that would be the biggest and best of the show." And it was—at Inglewood.

"First Lady hit me the same way," he said. "When I saw my first bloom it hit me like none had before and none like it since."

A new laciniated white cactus

HE CREATES NEW FLORAL BEAUTIES

comstock even taught the bees the language of the dahlia but protects his prize winning stock from stray influences

currently about ready for introduction was almost like that, but not quite. And the huge yellow dahlia named Art Linkletter (1957) was pretty close, but not quite: "I knew it would be the biggest."

Then there was another one now named Jody Gregory and ready for introduction next year. But after its first year something happened to the Jody Gregory seedling; the huge blossoms were smaller. Comstock threw away all of them, but remembering that first bloom he recovered and saved twelve roots. A change to different soil and more fertilizer brought it back to its first-bloom glory.

World Wide Fame

Now, eight years later, 200 plants of Jody Gregory are growing in the four-acre field back of the Bank of America on Dahlia Drive in Solana Beach—growing clumps of tuberous roots to be sent all over the world.

Many other Comstock introductions are growing in the field, along with a cross section of all of the good current dahlias, and hundreds of plants of cutflower varieties which he supplies to the wholesale florists.

Comstock has been a commercial grower and an experimenter with seedlings almost since he grew his first dahlias.

Even though the business has reached large proportions at times, it has been a weekend sideline until now. At the same time he has been a cable splicer for the Pacific Telephone Company, beginning as an apprentice 41 years ago, and retiring as a foreman only recently —officially as of August 1.

"I'm going to do a lot of things with seed and seedlings that I have thought about," he said. "I may even change locations and build everything new with modern propagation facilities."

First Dahlia

Comstock was living on 37th Street, south of University Avenue, in San Diego, when he saw his first dahlia in 1927. He was working in his yard when a neighbor, Miller Bushway, brought over a bloom of The Millionaire, a famous one of its day.

"It was seven or eight inches across and was the biggest flower I had ever seen," Comstock said. "I thought it must be a chrysanthemum. I told Miller that if he could grow flowers like that, I could, too.

"So the next year I bought 100 dahlia seeds and three roots at 5 each—Jersey's Beauty, Jersey's Beacon, and Jane Cowl, the best of their days, and still on the market in 1963."

Flower gardening came naturally. As a boy he raised vegetables, rabbits, and later, prize pigeons and poultry.

Competitive exhibiting came natural, too. He took his birds and poultry to the San Diego County Fair, held then in the basement of the Maryland Hotel.

That first year as an amateur dahlia grower Comstock carried flowers to the Southern California dahlia show at Long Beach, and among his winners was a seedling.

Lucky

"That show made a hit with me," Comstock said. "So I decided to save my own seed. I was lucky right from the start. I remember I got about 2,000 seed from one plant, and from the beginning I started swapping seed with dahlia growers all over the world. I have saved and distributed thousands and thousands of seeds. I'm still at it, but now my seeds are better because I have learned how to produce for quality."

He has done a lot of hand pollinizing, but has just about given that up as too tedious and slow.

"I read somewhere you had to use a camel's hair brush," he said. "So I got one and worked carefully on my first one bloom. I harvested only seven seed, but was able to produce three plants from that first effort."

Now he does it wholesale, but just as selectively. He lets the bees do it. He grows only selected seed varieties in a huge bug-proof screen house, and inside with the dahlias he keeps two hives of bees. The bees don't get out—or in, with unwanted pollen.

Comstock calls the seed from the screened-in section of his garden "quality-plus seed," and can't supply the world-wide demand even at a premium price of 10 cents a seed.

Beat The Bees

Hand pollination is easy, he said —for those who want to do it. The secret is to get at it real early in the morning before the bees start to work and catch the blossoms as soon as they show their centers and expose their pollen.

As soon as a flower is fertilized it will not accept other pollen. This makes it unnecessary to cover the bloom for protection, he said. To be sure, he advocates pollinizing the same cross three times on successive mornings.

By hand crossing he produced the Art Linkletter, and another famous one, Groucho Marx (1956). Over a period of four years he experimented by hand-crossing Miss San Diego with Miss San Diego, trying to produce a white dahlia with the same form and characteristics. The white cactus he is watching now is a product of that experiment.

At the end of the project, 90 per cent of the seed produced flowers

---

Miss San Diego, one of the famous Comstock dahlias, was developed by hand pollinizing. A pink-orange blend, it is a laciniated incurved cactus.

The seed parents were a yellow laciniated cactus type named Beaute, from Holland, and a pink straight cactus from Australia, named Splendid.

Two other famous San Diego native dahlias, First Lady and Maureen Connolly, both yellow formals, came from the seed of The Governor, a much larger formal yellow. Although both came from the same seed the same year Maureen Connolly propagated faster and was introduced a year earlier, in 1954.

His Mouney C, a florist-sized white formal, named after the banker, Mouney C. Pfeffercorn, came from seed of the large pink Stardust.

that were almost identical with the original Miss San Diego. He discovered that it takes five generations to throw out unwanted characteristics by hybridizing.

"I didn't go far enough to get what I started out for," he said. "But I think the white cactus is another great one. I want to watch it another year."

Going Professional

Comstock didn't stay an amateur long. He had been a wrestler before growing flowers, and learned that there are fewer worries by "going professional."

He had been raising dahlias only three years when he went "professional" and issued his first price list in 1931.

"I hadn't read any books about growing flowers, but because I had grown other things and raised fine poultry and animals I knew I could recognize the good traits of other things, dahlias included," he said.

He got ideas and learned by watching others. He learned much from a Japanese gardener working at the Richard G. Atkinson nursery in Leucadia, now the DeHahn Nursery.

He watched an Inglewood grower take cuttings, and mastered the art quickly, learning that he could market many plants from a few roots.

By experimentation, Comstock learned that fertilizer with a 4-10-10 formula is best for dahlias, got a company to mix it for him, and now suppliers all over Southern California produce it as a bulb food.

Bug Battle

He also learned that the best results in the battle against insects can be had by alternating sprays—malathion, DDT, chlordane, kelthane, and, yes, old Black Leaf 40, which he says is very good against aphids and won't burn the blooms.

He uses a lot of barnyard fertilizer in the fall and winter, and fumigates each year, successfully with both Telon and Vapam.

Comstock has had as many as 20,000 dahlia plants at a time, but now he has only about 8,000, including the 450 in his screened bee house.

"Now that I have retired from the telephone company, I'll have more time to work with the seedlings," Comstock said. "But I plan to be more selective.

"I have some good ones coming, the kind of dahlias that speak for themselves. I couldn't quit."

BEWARE

By Nathan J. Naiman

I Was Bitten by The Dahlia Bug

"MR. TOBIASON, what kind of flowers are those?"

A tow-headed ten-year-old followed a dahlia grower up and down the hillside terraces on Maryland Avenue in San Diego.

"My, they are pretty. I'll have to bring my dad down to see them."

That was the downfall!

That was the day I was bitten by the dahlia bug!

Through hail, red spider, mildew, thrip, and nematodes, the lure of dahlia culture has served as a beguiling siren!

The biggest dahlia in the show! The smallest dahlia in the show! The best foliage in the neighborhood! The loveliest arrangement in the arrangement section!

Goal after goal has been sought, and there has been no turning back.

Catalogs from Holland!

Tubers from Mr. Comstock at Solana Beach!

Swap nights at the monthly dahlia society meetings!

The search for unique dahlias goes on and on. But what a satisfying hobby! Only one dahlia grower can tell another dahlia grower what it means to be bitten by the elusive dahlia bug!

Satisfactions?

Oh, they are numerous. What can be more wonderful than to have a whole yard full of vibrant flowers, each unique with its own char-

acteristic color, shape or size—each shimmering in its own lordly loveliness waiting to be picked?

What greater joy than to be able to share dahlia beauty with the sick, the lonely, the sad, or the joyous!

Flowers were made to be shared —and as a dahlia grower, this reward parallels the satisfaction of growing dahlias well.

But how badly can one be bitten?

Are the results permanent and lasting?

Does one ever get over the thrill of producing a new, unique seedling?

These are questions that must answer themselves!

On our last trip to the Pacific Northwest, we saw a sign that said "LOST ACRES DAHLIAS." Up hill and down dale we followed a rustic road. There in a field overlooking the Columbia River we found another dahlia grower. Today my garden is brighter because of his unique tuber that will be shown in San Diego for the first time this year. His garden is richer because of the tuber I could send to him.

Friends can be found up and down the coast. All you have to do is stop at the gate of the garden where you see a dahlia growing. A new friend is in the offing. A new tuber may be available for your garden. Another swap of tubers may be made.

We found the Panizzera family at the Union Hotel at Occidental, Calif. They had a gorgeous yellow water-lily dahlia that was edged with red.

In Oakland we discovered Mr. and Mrs. W. C. Trotter. We only had 15 minutes to spare between appointments that day, but we stayed for two hours. Just wait and see—his little red midget will be a sight to behold.

How badly does the dahlia bug bite?

Not hard! But the results can be lasting!

If you really want to know, come to a meeting of the San Diego County Dahlia Society on any 4th Tuesday of the month. No one will push you to become a dahlia fan, but the lure of the dahlias will take hold. You will discover why the bite of the dahlia bug can be frustrating, but so very satisfying as you plant your first hill of dahlias, the perfect flowers to raise in sunny San Diego.

Illustrations
by Mrs. Vesta Garrett

Nathan J. Naiman has been growing and exhibiting dahlias many years. His wife, Kathryn, is an accomplished arranger of other flowers as well as dahlias. Both are active in the San Diego County Dahlia Society. When Mr. Naiman is not in his garden, he will be found in Lyman Judson Gage Elementary School in San Diego; he is a veteran principal and an elementary education expert.

When Dr. Harry Wegeforth founded the, Zoo he was interested also in preserving the fine original plantings of Balboa Park in this area and introducing more materials that would be suited to the food and habitat needs of the exhibits. Today's director, Dr. Charles Schroeder, is equally keen about maintaining and adding to the lush green setting of the Zoo treasures. Many tropical trees and shrubs in the landscape match the original locale of the exhibits and are rarely seen in colder locations.

Horticulturally, these plants approximate the status of an arboretum. The effort to keep them free from pests and in locations suited to their climatic needs requires expert "know-how" and persistant "do-it-now" measures to obtain such good results. Much credit is due to the Horticultural Superintendent, Mr. Tim Aller, and his staff, for keeping this Zoological Park "in the pink."

The excitement of trying to see all of the Zoo on the first visit leaves little time for any thought of its environment. It is only in retrospect that the beauty of the surroundings comes back and the visitor begins to wonder what trees and plants composed the picture.

When Chauncy Jerabek started these plant walks he hoped people would re-live the pleasure of their trips through the Zoo by reading descriptions of the plant life.

It would also give local residents, who come often, an opportunity to study the appearance and eventual size of plants and trees they might use in their own gardens. In addition, it was felt that the stories of the native origins and uses of this wealth of landscape material would increase the enjoyment of seeing them in their present location. It was with these aspirations in mind, that the Zoo Plant Tours in these pages were started a year ago.

In this issue Mr. Jerabek starts his Third Zoo Tour at the top of Canyon E. He comments on the plants around the Big Bird displays on the hillsides, down to the Aardvark Grotto and the Hippo Pool at the bottom. An easy climb up Canyon F discloses many fine trees and shrubs that enhance the exhibits of cranes and storks and grottos of lions, tigers, bears and sea mammals.

Plants from Around the World in the SAN DIEGO ZOO

(Part Three)

By Chauncy I. Jerabek

WE WILL start this tour with a turn to the left from the main Zoo entrance and cross the wide paved space to the Bird Canyon E, which we shall see many palms let me say, before we start, that a palm is not just a palm. There are about 3,000 species and each one has its own individuality. They are divided into two main classes; first, the feather or pinnate-leaved palm, second, the fan or flabelliformis type. Palms are not really trees in the botanical sense, because they do not make annual or cambium rings from which age is determined.

At the beginning of our walk are two tall Queen Palms, *Arecastrum romanzoffianum.* They were misnamed *Cocos plumosa* for so long that it has almost become an accepted common name. Although native to several So. American countries, these feather palms were first discovered in 1815 on the island of Santa Catharia off the coast of So. Brazil. They are often seen as street trees in San Diego. On the corner and, also in the raised bed in the canteen, are clumps of Senegal Date Palms, *Phoenix reclinata,* a graceful feather type from So. Africa. Theoprastus named it 'Phoenix,' in reference to Phoenicia, where it was first seen.

The turn in the path is faced with junipers. There are only a few of the green Pfitzer Juniper, *Juniperus chinensis pfitzeriana,* more of the blue-gray *J. c. var. glauca.* The name indicates their oriental origin.

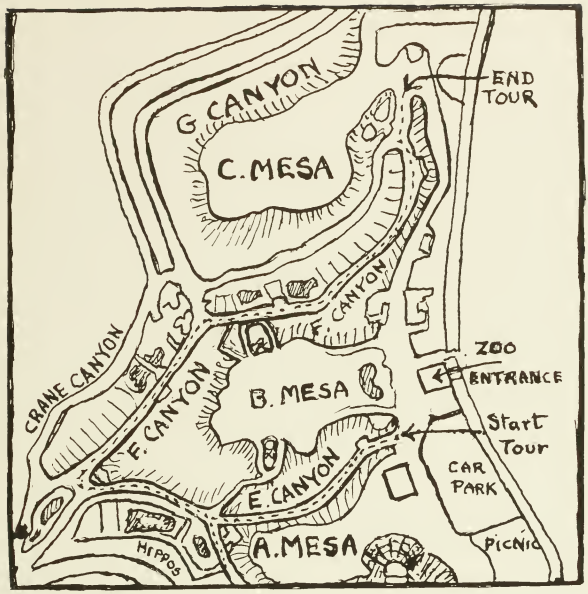
As we go downhill we see several tall plants of Toyon, *Heteromeles arbutifolia.* The white July bloom of this native California Holly provides fine red berry color at Christmas. To the right of the Cormorant enclosure, native Lemonade Berry, *Rhus integrifolia,* may be recognized by its thick toothed leaves and later by sour berries. These shrubs are probably canyon volunteers.

Inside the first fenced area are two Moreton Bay Fig, *Ficus macrophylla,* of Queensland. These are large-scale trees with big oval leathery leaves, dark green above and brownish-yellow below. The bark is smooth, dark gray in color. Its roots build up on the surface.

Extending into the road is a straggly Australian Tea Tree, *Leptospermum laevigatum.* Its sprawling shape is covered with small grayish leaves and tiny star-shaped white flowers followed by small seed capsules.

Beyond the Tea Tree is a variety of Bamboo, *Bambusa nana.* It is easy to see that both stems and leaves are smaller than the Giant Bamboo, *Sinocalamus oldham* just beyond it. The latter, a native of

The seal pools provide a setting for a wonderland of plants from around the world.



San Diego Zoo Photos By R. Van Nostrand

China, belongs to the Grass family. True bamboo always grows in clumps, never from creeping underground roots. You will see many of these towering canes throughout the Zoo.

Inside the next bird pen are several Canary Island Date Palms, *Phoenix canariensis,* enormous, heavy-trunked, feather-leaf palms. Most of the broad-leaf trees with them are Forest Red Gums, *Eucalyptus tereticornis* from Australia.

Along the left side of the road, as you walk down, are volunteer seedlings. Among these are acacias and eucalypts and Rosyplume Pampas Grass, *Cortaderia rudiuscula,* which is self-sown from Ecuador to Chile and Argentina. At the right, almost at the end of the Tapir pen, is a eucalyptus with bluish-gray foliage, Red Box, or Silver Dollar Gum, *E. polyanthemos,* an Australian native with nearly round leaves.

On the left of the Aardvark Grotto, across the road, are three low Knife-leaf Wattle, *Acacia cultriformis.* In the spring, out from the silver gray leaves that hug the stems, come clusters of small gold puff balls. To the right of the entrance is a young Starflower Grewia, *Grewia occidentalis,* also called *Grewia Caffra,* a spreading evergreen shrub with linden-like leaves. It has lavender flowers most of the time, and a seedpod with Four Corners, which is its common name. This grewia hails from the Aardvark's native Africa.

Beyond it is a triple-branched Dragon Tree, *Dracaena draco,* whose dried sap was supposed to resemble a dragon's blood. It has a heavy trunk crowned with tufts of glaucous sword-like leaves. Sometimes called a palm, it really belongs to the Lily family. Dracaenas come from the Canary Islands. On the left, as you leave the grotto, are five Honey-myrtle, *Melaleuca armillaris.* They are graceful trees with spreading branches, short pliable needle-like foliage and pure white cylindrical flowers. The small tree beyond is Gray Gum, or Leather Jacket, *Eucalyptus punctata.*

Across the road, towards the Hippo pool, are some light green Australian shrubs called Needlebush, *Hakea suaveolens,* because of their prickly foliage. White flowers develop into woody pods which split open to show two winged seeds. Inside the fence are several clumps of White Pampas Grass, *Cortaderia selloana,* from Argentina. These plants have saw-toothed edges on the foliage and long stalks of white plumes in late summer. There is a row of Mauritious Hemp *Furcraea gigantea,* a succulent desert plant from southeastern Brazil. It has shining green sword-like leaves. From the center appear tall branched spikes of greenish-white flowers, followed by numerous bulbils that are easy to grow. After blooming the plant dies.

The trees with gray bark, and weeping branches at the front edge of the Hippo pool are Red River Gum, *Eucalyptus camaldulensis.* In the space between the pools are two *Philodendron speciosum,* a showy plant with large glossy leaves. It becomes tree-like with age. The Windmill Palm, *Trachycarpus excelsus,* is a slow-growing fan type with gauzy wrappings on the trunk. In the background, two Cabbage Trees, *Cordyline australis,* start out with single trunks but branch as they grow, forming tufts of narrow leaves on the ends of the multiple limbs. Erect or drooping panicles of small scented flowers are followed by tiny white berries on this group. There is a New Zealand Flax, *Phormium tenax var. marginata* with green and white lines on narrow leaves that are often three or four feet long. Within the next enclosure are several Ironbark Eucalyptus, *E. sideroxylon.* It has rough blackish bark and flowers that vary from white to red.

At the intersection turn right towards the two benches with umbrellas. In the border on the left is a Natal Plum, *Carissa grandiflora,* a South African evergreen shrub with fragrant starry-white flowers and decorative red plum-size fruits with a bland taste, sometimes made into jam. In the Zoo much use is made of this plant in front of ex-

hibits where the sharp thorns keep children from getting too close. The next shrub is Pink Diosma, *Coleonma pulchrum,* from So. Africa. It is often called pink Breath of Heaven. The plant with the dull green leathery leaves is Yeddo Raphiolepis, *Raphiolepis umbellata var. ovata,* of Japanese origin. Fragrant white flowers are followed by blue-black berries. The canna-like leaves of Bird-of-Paradise, *Strelitzia reginae,* have winter stalks of bird-like flowers in brilliant orange and peacock blue. These plants are repeated as you go along this border.

The road below is outlined with bronzy green leaves of Brush Cherry, *Eugenia paniculata var. myrtifolia compacta,* an elongated, but descriptive name.

Fluffy clumps of Cape Leadwort, *Plumbago capensis,* from So. Africa, are seen at their best along the right roadside as we start up Canyon F. Most of the year the dense growth of plumbago is covered with phlox-like, baby-blue flowers with sticky-haired calyxes.

Some of the trees bordering the large bird pens across the road are Dutch Elms, Ulmus hollandica, reputed to be hybrids. Their leaves are smooth with an unequal base and smaller than the broad rough leaves of the European Elms beside them. Inside the Crowned Crane pen is a Maidenhair Tree, *Ginkgo biloba.* The specific name comes from the shape of the leaf. In autumn the foliage turns yellow and falls. In the Japanese Sacred Crane enclosure there is a Red Buckeye, *Aesculus carnea.* This small tree is a hybrid between *A. pavis* and *A. hippocastanum.* The leaves radiate like fingers on a hand. Loose clusters of rosy-red spring flowers are followed by globose, slightly prickly fruit.

In the next big bird pen is a Red Mulberry, *Morus rubra.* The leaves are usually heart-shaped, sometimes lobed. It bears small bright red cylindrical fruit that are edible when they turn purple-black. Birds love them.

Further along, in the Large Crane pen, there are two Sweet Gum, *Liquidambar styraciflua,* a deciduous tree from our southern states. It has a straight trunk with corky branches and star-shaped light green leaves that turn red, gold and bronze in autumn. Fine color and the spiny seed-balls make this an attractive tree the year around. In the back, near the wall are three Black Locust, *Robinia pseudoacacia,* from eastern and central U. S. They have airy light-green pinnate foliage and creamy-white fragrant flowers, followed by reddish-brown pods.

In the Saddle-billed Stork area is a Hawthorn, *Crataegus monogyna rubroplena,* a native of Europe and North Africa to the Himilayas. It has dark green foliage, double red flowers and small red fruits that show it belongs to the Rose family.

In the Tilford Crane pen is a deciduous White Mulberry, *Morus alba,* from China. It has smooth light green foliage. Birds enjoy the soft white fruit in late May. This last group of plants are of more interest to local gardeners, who almost never see them here.

High up against the restroom across the way are White Fleece Trees, *Melaleuca genistifolia,* from Australia. The small prickly leaves and many white bottle-brush flowers leave seed vessels crowded on the stems. The first shrub in the long planting bed by the road is a Mock Orange, *Pittosporum tobira,* from Japan. Next is a Shamel Ash Tree, *Fraxinus udhei,* from Mexico. Sometimes, depending on its location, the dark green foliage is deciduous. The origin of the Upright Arbor Vitae, *Thuja orientalis var. pyramidalis* is indicated in its name. So. Africa is credited with the Speckboom or Elephant's Food, *Portulacaria,* at the end of the bed. It is a densely-branched fleshy-stalked shrub, with small round thick leaves and tiny pink flowers which are rarely seen unless the plant gets very dry. Back on the other side, in the Gerenuk pen, there is a tall Weeping Willow, *Salix babylonica,* from China. Bordering the Canteen area at the end of the Seal Pool is a hedge of Glossy Privet, *Ligustrum lucidum,* of oriental origin. It has waxy leaves and clusters of small white flowers, that later become blue-black berries. Near the walk there is a Japanese Mock Orange, *Pittosporum tobira var. variegata,* with green and white leaves. In this same area is a spreading evergreen shrub with thin shining leaves, often used as a filler. It is *Xylosma senticosa,* a semi-tropical plant with no common name.

In the next planter that turns the corner, is a gray feather-fronded Pindo, Yatay or Jelly Palm, *Butia capitata* or *Cocos australis.* It is a slow, hardy grower. In its native Brazil, the fruit clusters of this tree sometimes weigh 75 pounds. The conical fruit has an edible pulp with a pineapple flavor. This acid pulp can be utilized in jelly making, hence one of its common names. Beside this palm is a low-branched Olive Tree, *Olea europaea.* The third bed has a Giant Bird-of-Paradise, *Strelitzia nicholai,* a plant resembling a banana tree. Huge flowers with blue tongues, crowd out at right angles to the gray-green leathery leaves. At its base is a mixed group of succulents.

Across the road there are three more Giant Bird-of-Paradise plants and a clump of Crinums. The rampant evergreen vine all over the

Framing the cool abode of the polar bears is one of the many species of Eucalyptus trees found throughout the zoo.

The Hippo pools are surrounded with a variety of trees and plants from all over the world. Gum trees, white Pampas Grass, Windmill Palms and Cabbage trees are found around the enclosures.

back wall of the Bengal and Siberian Tiger Grottos is Creeping Fig, *Ficus pumila,* from China and Japan. The next planting contains a Dragon Palm with four trunks, two Queen Palms and, near the rear, two king or Piccabeen Palm, *Archontophoenix cunninghamiana, (Seaforthia elegans),* a beautiful slender feather palm from Australia.

In the back of the Stellar Sealion pool is an Island Bottlebrush, *Melaleuca nesophylla.* It has spongy whitish bark, fine gray-green leaves and numerous dense heads of mauve flowers in early summer from Australia, of course. Just inside the fence, the three round-leaved trees and Silver Dollar Gums. There are also some broad-leaved Forest Red Gums in the walkway.

To the right of the Lion Grotto are more Giant Bamboo and, in the left background, three Canary Island Date Palms. There is a row of Natal Plums next to the front rail. Behind the Elephant Seal pool is a planting of tropical trees with fern-like foliage and bluish-purple flowers in early summer. These Brazilian trees, known as Green Ebony, *Jacaranda acutifolia,* lose their leaves for a short time in winter.

The back edge of the Brown Bear Grotto is softened by a deciduous vine, Cat's Claw, *Doxantha unguiscati,* native from the West Indies to the Argentine. It has bright green foliage, yellow spring flowers and seedpods a foot long. It was known formerly as *Bignonia tweediana.*

Hugging the wall on the right is Creeping Fig, *Ficus pumila var. minima,* a slender vine with very small leaves. Lopping all over it, is the Blood-red Trumpet Vine, *Phaedranthus buccinatorius,* a vigorous Mexican native that climbs with three-parted tendrils and bears gorgeous pendulous clusters of four-inch red trumpet flowers with yellow throats. It used to be called *Bignonia cherere.* These same vines will be seen on other grottos. In between the walls are three Needlebushes. Behind the Northern Fur Seal pool are five Pindo Palms, and to the front, on the right, are three Queen Palms and, beyond that, a nice stand of Giant Bamboo. Sharp thorns on a planting of Firethorne, *Pyracantha, var. Victory,* in front of the Eurasian Bear moat, discourage children from reaching over. The small evergreen leaves, white flowers in spring, and red berries in fall and winter, are most decorative. This shrub is used in many critical spots in the Zoo.

On the rear wall of the American Black Bear Grotto is Yandorea, *P. ricasoliana, (Tecoma mackeni),* a vine with large pinnate leaves. This South African that climbs without tendrils, is deciduous in cold weather. Funnel-shaped flowers, pale pink, with red stripes, appear in loose panicles from July to August.

Across the road, the ground cover on the bank is the well-known Carpet Weed or Ice Plant, *Mesembryanthemum floribunda,* from So. Africa, a creeping plant, with small crystalline leaves and myriads of mauve-pink blooms in spring. It is rather drab in summer, rarely blooms in the shade. Further along, on this right-hand side, just beyond the Sun Bears, is a Monterey Cypress, *Cupressus macrocarpa,* native to the headlands about Carmel Bay, California. Dark green foliage forms a broad spreading crown.

Almost up the hill, is a large planting of an old favorite Primrose Jasmine, *Jasminum mesnyi,* an evergreen shrub from China. It is beautifully grown in fountain form, with many flexible green branches spouting from the base, studded with lemon-yellow flowers in spring. On some benches, thoughtfully placed in front of these jasmine, we pause to rest and reflect as we end our Third Plant Tour of the San Diego Zoological Gardens.

CHOOSE LANDSCAPING MATERIALS FOR BEAUTY EASY MAINTENANCE

By
Brian Wyckoff
and
Bill Faringhy

(Editor's Note: This is the second of a two-part series on landscaping the tract subdivision home easily and economically. The home chosen for the example was in the Seven Oak section of Rancho Bernardo, where people buy their homes for active retirement. The Rancho Bernardo homes were chosen because landscaping is accentuated by placing the telephone, electricity and television paraphenalia all beneath the ground.)

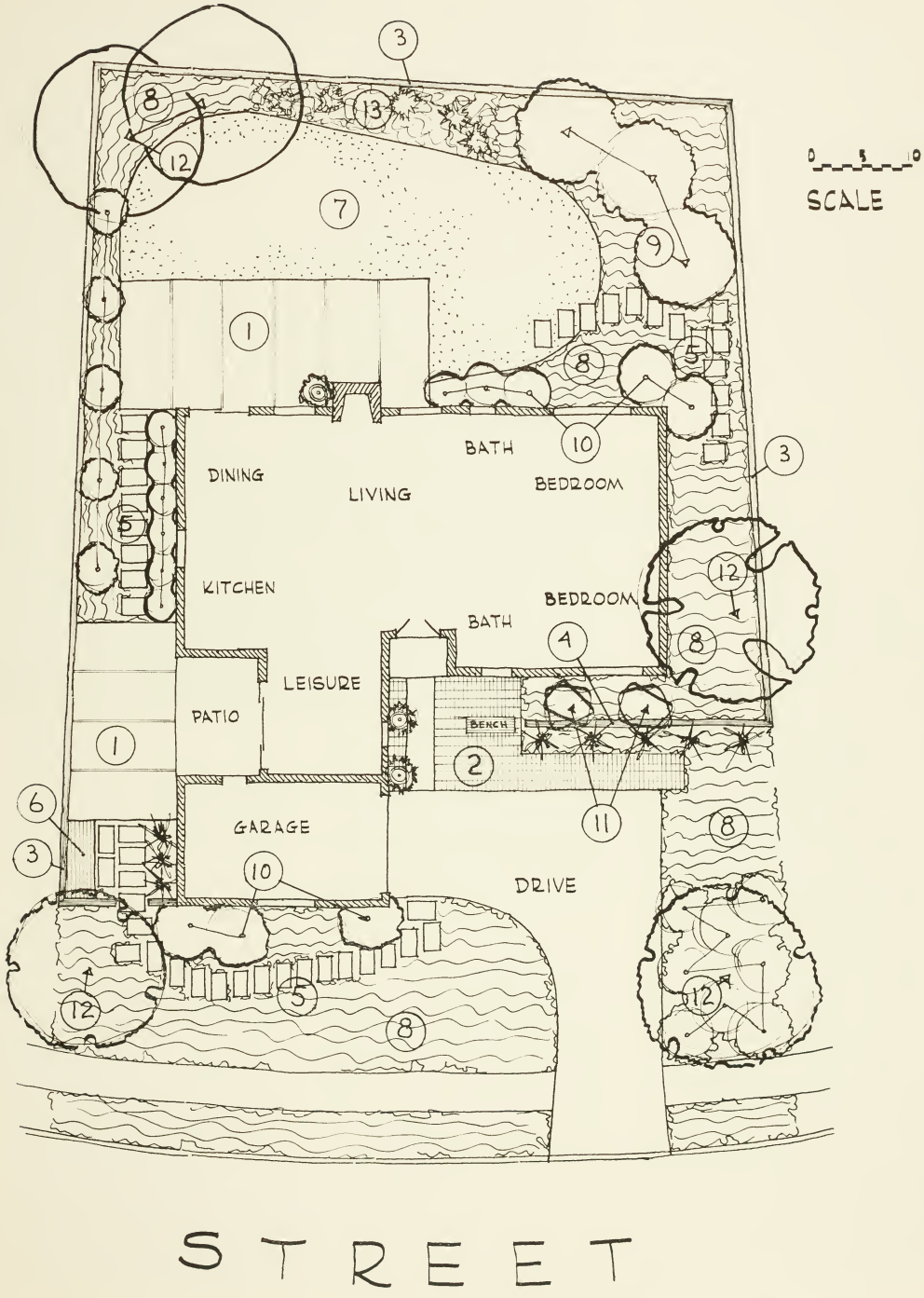
Now that we have established the basic ground rules for landscaping the home in the June-July issue, we turn now to the specific answers to the problems of construction and selection of plants and materials.

Construction—Pavement:

1. Concrete: Need not be just the familiar concrete color, but can be made more interesting by use of color stains or aggregate additives, or textured treatments: (Try broom finishing the surface of newly laid, but partially set concrete to expose the underlying aggregate.) Two by four redwood dividers make effective expansion joints, eliminate undesirable cracking while adding interesting pattern.

2. Brick: Short of laying brick or a concrete slab, placing it on a one-inch dry-mix of one part cement to four parts sand provides a stable base which will prohibit weed growth. After brick is in place, hose down with a light spray. A covering of the same mix swept into cracks will further bond the bricks.

All pavement should slope a minimum of one-eighth inch per foot to insure drainage. Where pave-


SCALE
0 5 10
DINING
LIVING
BATH
BEDROOM
KITCHEN
BEDROOM
BATH
LEISURE
PATIO
BENCH
GARAGE
DRIVE
STREET

ment abuts the building, be sure to slope away from the building.

Paving blocks of several sizes and materials may be obtained ready made at various local dealers. Or, if an individual touch is desired, they can be made by the resident. In the interest of unity, try to match surface treatments from one area to another.

3. Irrigation: Thought should be given to placement of hose bibs throughout the garden so that too long a hose need not be used. Most plants may be watered with one relatively short length of hose.

For those who like to take the time, a small residential area can be irrigated by hand. (Hose bit by bit).

For those who prefer to sprinkler system, care should be taken to have the system designed around the planting to insure that each plant gets the proper watering. Mere area coverage is not ideal. Separate planting areas should have a distinct system connected to separate valve and individual sprinkler heads should be adjusted to supply the proper amount of water to the adjacent plants.

4. Plantings: The plant list cannot be considered complete because of the hundreds of species which grow here. We have tried to show some of the basic types of plants and the uses to which they may be put.

Planting Plan

Fronting on street

Deciduous:

Liquidambar styraciflera—"Liquidambar"
Jacaranda acutifolia—"Jacaranda"
Koelreuteria formosana—"Chinese Flame Tree"
Platanus racemosa — "California Sycamore"
Koelreuteria paniculata — "Golden Rain Tree"

Evergreen

Eucalyptus lehmanii — "Lehmann Eucalyptus"
Magnolia grandiflora — "Southern Magnolia"
Ceratonia siliqua — "Carob"
Pinus Lalepensis — "Pine aleppe"

Side Yard: For this area we suggest an evergreen.

Eucalyptus polyanthemos — "Redbox Eucalyptus"
Pinus Halepensis — "Aleppo Pine"
Acacia melanoxylon — "Blackwood Acacia"
Harpephyllum caffrum — "Kafir Plum"
Ficus benjamina — "Weeping Chinese Banyan"

Street side of Front bedroom: Evergreen recommended

Hymenosporum flavum — "Sweetshade"
Pittosporum eugenoides — "Tarata"
Pittosporum tenuifolium — "Tawhiwhi"
Melaleuca Leucadendron — "Cajeput Tree"
Lyonothamnus floribundus asplenifolius — "Fern Leaf Lyon Tree"

Against fence or wall: Shrubs — erect (sun or shade)

Nandina domestica — "Heavenly Bamboo"
Podocarpus macrophyllus — "Yew Pine"
Mahonia lomarifolia
Ligustrum texanium — "Texas Privet"
Callistemon lanceolatus — "Lemon Bottle Brush"
Bamboo — "Golden Goddess"

Shrubs (small)

Sun

Raphiolepis indica rosea — "Pink India Hawthorn"
Trachelospermum jasminoides — "Stat jasmine"
Aster fruticosus — "Shrub Aster"
Chrysanthemum frutescens—"Marguerite"
Juniperus sabina tamariscifolia — "Tamarix Juniper"
Veronica — "Blue Spire"

Shade

Raphiolepis umbellata ovata — "Roundleaf Yeddo Hawthorne"
Azalea sp:
Hypericum patulum henryi — "Henry St. Johns Wort"
Trachelospermum jasminoides — "Chinese Star Jasmine"
Hebe buxifolia — "Box leaf Hebe"

Ground cover, Sun (all low maintenance covers which require only annual trimming)

Fragaria chiloensis — "Ornamental Strawberry"
Lampranthus spectabilis — "Trailing Ice Plant"
Gazinia uniflora leucoleana — "Trailing Gaziana"
Hypericum calycinum — "Aaron's Beard"
Cotaneaster microphylla — "Rockspray Cotoneaster"
Anthemis nobilis — "Roman Camomile"
Matricaria tchihatcheui — "Turfing Daisy"

Shade or Part sun

Ajuga reptans — "Carpet bugle"
Potentilla verna — "Spring Cinquefoil"
Arenaria verna caespitosa — "Irish Moss"
Pachysandra terminalis — "Japanese Spurge" (shade)

Far corner — two trees

1. Deciduous:

Platanus racemosa — "California Sycamore"

2. Evergreen

Eucalyptus sideroxylon rosea — "Red Iron Bark"
Eucalyptus polyanthemos — "Redbox Eucalyptus"
Pittosporum undulatum — "Orange Berry"
Stenocarpus sinuatus — "Firewheel Tree"

Rear corner — three smaller trees

1. Deciduous

Zizyphus jujube — "Chinese Jujube"

2. Evergreen

Eriobotrya japonica — "Loquat"
Prunus caroliniana — "Carolina Laurel Cherry"
Prunus lyoni — "Catalina Cherry"
Psidium cattleianum — "Strawberry guava"
Meyer Lemon
Mandarin Orange
Langpur Lime

Shrubs — medium

Sun Shrubs

Pyracantha crenato-serrata
Xylosma senticosa — "Shiny leaf Xylosina"
Pittosporum tobira — "Japanese Pittosporum"
Escallonia rubra — "Red Escallonia"
Diosma eridoides — "Breadth of Heaven"
Choisya ternata — "Mexican Orange"

Shade Shrubs

Xylosma senticosa — "Shiny leaf Xylosina"
Pittosporum tobira — "Japanese Pittosporum"
Camellis sp.
Ternstroemia japonica
Tibouchina semidecandra — "Brazilian Glory Bush"
Pieris japonica — "Lily of the Valley Shrub"

A TRANSPLANTED SAN DIEGO MAN WRITES ABOUT TREES

Dr. Horace F. Clay is a San Diegan transplanted to Hawaii.

He stood out from the beginning as a protege of Kate O. Sessions, with whom he worked for a time. Later he benefited from the encouragement of Alfred C. Hottes.

Horace Clay, the boy, went through Point Loma High School, as a youth, to the University of California at Los Angeles, where another man of stature in the world of horticulture, Dr. Vernon Stoutmeyer, doubtless had his part in the moulding.

He received his Bachelor of Science degree from the University of Hawaii and his Master of Science degree from Amherst.

After taking time out to work in Honduras and do research for the Hawaiian Sugar Company, he returned to the mainland to obtain his Ph.D. from the University of Chicago.

At present he is Associate Specialist in Horticulture, University of Hawaii.

His co-author, James C. Hubbard, is Home Economist in Landscape Design at the same university.

We seldom find a horticultural work that recognizes climate as a prime factor and which suits the material to a reasonable area thereof. Here is a book that does just that.

TREES FOR HAWAIIAN GARDENS, bulletin 67 of the Cooperative Extension Service of the University of Hawaii, comes to us with a strange, salty tang and as a breath of fresh air that invigorates. It brings forcibly to mind species of trees that have been tried and which have failed in Southern California; many that are at home here and others that should be given a serious and not tentative trial . . . because, after all, this is approaching the subject from the opposite pole and the most should be made of the opportunity.

There is a foreword by Morton M. Rosenberg, Dean of the College of Tropical Agriculture and the book is dedicated to Harold A. Wadsworth, Dean Emeritus. The authors, Horace F. Clay and James C. Hubbard have made a very practical study and application of the tree to its possible service under given conditions. They have not overlooked the aesthetic aspect. There are some lessons here we can very well heed here in San Diego.

You will want this book and it is my desire to go through its pages with you for notes on past experience and future possibilities certain species may offer for Southern California, especially this most southern portion.

Turn to page (19) for an excellent cut of the Candle-nut Tree, *Aleurites moluccana.* This has not been tried here to my knowledge, although years past it was listed in Los Angeles. It should adapt to poor, dry soils in out of the way places. It has been used in Florida.

Plumeria obtusa is shown on pages (22, 36, 37), a beautiful, clear cut. The frangipani, *Plumeria emarginata,* has been tried but takes winter-chill too seriously and cannot abide frost. One grew in the author's coast garden to merely survive, but started to develop nicely when taken to the warm foothills back of El Cajon, California. It is hoped it may decide to flower in the near future.

Note at page 23 a short treatise, a thumbnail sketch on "Growth" followed next by one on "Roots," then on "Structure" and so through

you could try some of these trees here at home

ROLAND HOYT RECOMMENDS

the entire book. These portraitures are fundamental and succinct. Each bears close study. Here is a kind of poetry in prose, objective forms actually, but with subjective treatment, if one is reading and thinking.

The Chinese banyan (24, 25, 51, 62, 63), *Ficus retusa,* shows what roots can do to curbs, the sidewalk, pavement or a garden . . . then wonder at the reasoning of men who plant them on the streets of California cities, pits in the walk or boxes. The tree doesn't act like a banyan in the drier air of California with aerial roots, as shown in the photographs, nor is the leaf retuse. Nomenclature is very faulty here. We may not be talking about the same tree, but the terrific root damage still holds.

Ficus lyrata (96) is a distinctive garden tree here, but *Ficus macrophylla,* the Moreton Bay-fig, (51) becomes an immense tree, the specimen at the railroad station in Santa Barbara having a spread of more than 140 feet, with exposed roots wasting most of the ground beneath. There is no point or reason in an individual trying to live with this tree . . . beware.

SEE PRESIDIO

The Surinum-cherry (27, 38). *Eugenia uniflora,* shown here with subtle, tenuous line and evident polished stems is known in California as a bush. It surely has had time to grow up, if it so desires. *Melaleuca leucadendra,* the paperbark, or cajaput-tree (28, 89, 99) is exactly as shown for bark formation. It does equally well in humid Florida or arid California when it gets water at the root. Probably the best place to observe it here is in Presidio Park where the upper wall cuts across the through drive. It will be known by the bark.

The *Calophyllum inophyllum,* labeled "true kamani" at pages (28, 94) could be tried in a cove along our coast at the shoreline but protected with the sun to warm up all rock in the vicinity. Menninger calls it the most beautiful of all seaside trees.

The pepper-tree, *Schinus molle,* (29, 30, 99) is, I suspect a better tree in California. At least it seems happier and more completely developed here in deep, dryish soils and away from extreme heat. It does not thrive in lawn as shown.

Erythrina crista-galli, the more common of the coral-trees (29, 64, 87) would appear to be as well satisfied here as in the Hawaiian Islands. One of the better specimens in San Diego will be seen over a wall into Fort Stockton Drive at Ampudia. It drops not only the leaves in winter here, but its soft-wooded branchlets for a stark, picturesque effect.

Note the "Sonnet" on leaves (31) and observe four totally contrasting forms. This is deep within the natural and tends to quicken a casual appreciation and turn it back upon itself to seek the beginning.

The Royal Poinciana, *Delonix regia,* also called flamboyant, (31, 86, 96) does not grow in California, but is completely at home in South Florida. Two small trees in Chula Vista, California fought the good fight in the writers observation and finally lost out to benumbing nights that cancelled out the warmth of day. The Sacred Bo *Ficus religiosa* (31) with tailed rubber leaf grew for a time in Presidio park, then disappeared.

The pomegranate (32) is weeping for its dry, highly heated Mediterranean shore. In California, it is hard-woody, erect and quite bushy, deciduous . . . a rather ordinary plant, completely at home, happy to be here, as is oleander (80, 90) in the same category.

All citrus species also are much at home here, but the mango (33, 36, 88) just will not adapt for a fruitful and sober existence. The bright hills of the "magic belt" back of the coast hosts them for a good try, but not good enough.

Against the westerly wall of the author's house, grows *Thevetia thevetioides,* (36) a treasured gift from that wondrous and departed plantsman, Hugh Evans. There is one other on the warm slope of Grossmont above La Mesa. There maybe others, but any at all, surely points up the laggard nursery trade which will not supply this gorgeous blooming to gardeners.

RAIN TREE

The monkey-pod or rain-tree, *Samanea saman* (37, 45, 47, 99)

should find a place along the coast in California although it may lack sufficient glamour to become popular. Chauncy Jerabek grew a block of these trees in the Balboa Park nursery years ago. No one seemed interested except one park commissioner who took a tree to National City and one was planted in Missions Hills, San Diego. There is no record of results, other than that they started off satisfactorily. This may be too large for a restricted area and has the unforgivable habit of dropping its leaves for a moment in winter.

The Olive, *Olea europaea* (39) can but be an ordinary tree in Hawaii and along coastal California. Welcome mention is made in this book of the other species, *Olea chrysophylla* (91) which does better in moderate warmth or cool humidity, but the tree is not normally available to Californians. Some enterprising nurseryman in sensible and effective competition with the supermarket will bring this in some day . . . why not now? The common olive is one of the more un-common and handsome of trees when grown in high heat and aridity, but loses its delightful grey-friar appearance when too much domesticated . . . much drink and overburden of food.

The Lychee-nut, *Litchi chinensis* (41, 48, 68) could be used here and was in at least one instance, the darling and productful hobby of retirement in the continued living of a worn business man. Stanley Andrews grew 16 of these trees successfully back in the El Cajon Hills of San Diego county. At one time he was harvesting as much as 1,000 pounds of the fruit, sold at $1.00 to $1.50 per pound. Later Chinese residents of Los Angeles would buy the crop on the trees and harvest it themselves. He used a rather heavy manure mulch, but the secret of this success was probably the mellow, loamy soil, drainage, and most of all, sweet well water.

The False-olive, *Elaeodendron orientale* (86, 96) is mentioned as a street tree. This is final result of a giddy childhood under the name of *Aralia chabrieri,* a juvenile form grown mostly in tubs. The adult does make a presentable street tree, but is seldom seen.

Tabebuia (40, 99) has not been grown in California, but finds a place in South Florida where the several species are known as trumpet-trees. They are quite handsome in flower. We can wish and wait. *Ficus benjamina* (24, 42) does satisfactorily in nearly frost-free areas of California.

Guavas Thrive

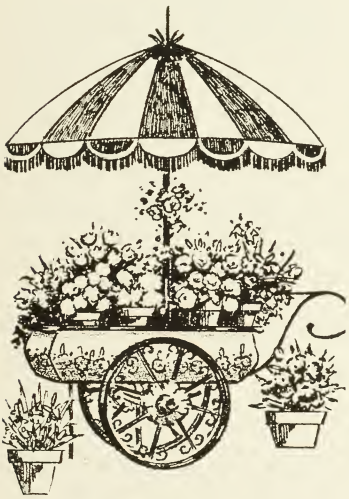
The Guavas (39, 42, 46, 54, 63) all thrive exceptionally well here. The Dracaenas, likewise in several species are quite common, not including the one shown (46). *Hibiscus tiliaceus,* (44, 50, 51) was tried out in the sands of Mission Bay Park, San Diego. It should be tried again, what, now with soil and some protection from the wind.

The Southsea-ironwood (54) *Casuarina,* in at least three species was one of the pioneering trees and excellent windbreak in Southern California. It is seldom used now. We envy those who can have the African Tulip-tree, *Spathodea campanulata* (56, 92). John Morley tried it in 1930 and several were set out in Presidio Park and elsewhere. They did not survive due to frost.

If we were not in such a hurry in California, we would grow lignum-vitae, *Guiacum officinale* (88) for the unusually handsome lavender-blue flowering, the orange berries and the interesting stem structure. We can use Harpullia (88), Jacaranda (88), Macadamia (89), probably as well adapted as in Hawaii, Magnolia (89), conceivably better, while Michelia champaca (89) and Murraya paniculata will doubtless do under sufficient protection from the wind.

The final section of the book treats of street trees, with photographs indicating a modern and sensible approach to the subject. This is not novel, but fresh and free-thinking, adapting to the living tree as well as the insistent call for space in contemporary living.

The book can be obtained from the Cooperative Extension Service, University of Hawaii, Honolulu, Hawaii for $2.75 postpaid.



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A Calendar of Care

• DAHLIAS

*Visit a show for names
*BB's are most popular
*Become a dahlia expert
*Seed catalogues help

A big problem for the average gardener who wants to grow dahlias is that of knowing the names of desired varieties and of those that will do well in the average garden.

The way to learn is to go to the dahlia shows and jot down the names. Or visit the "show" in the the dahlia hobbyist's garden.

This is the show season.

Each year, the first dahlia show in the nation is the big one in the Conference Building, Balboa Park, San Diego. It always is on the first weekend in August.

Other Southern California shows are at Costa Mesa, August 10 and 11, staged by the Orange County Dahlia Society; at Inglewood, in the Hollywood Park clubhouse, August 17 and 18, and at Long Beach, in the Municipal Auditorium, September 14 and 15. Additional big California shows are at Oakland, San Leandro, San Francisco, Sacramento, Bakersfield, and Fresno.

Of most interest to the average gardner will be the smaller ones—the florist varieties, which the dahlia specialist knows as BBs and which are from four to six inches; the miniatures, four inches and under, and the pompons, two inches and under. Poms bigger than two inches are called miniature balls up to four inches, and balls over four inches.

Bedding Dahlias

Unwin bedding dahlias are known to most gardeners; that's what they are, bedding flowers, of no value for exhibition because of their open centers and weak stem structure.

The bedding dahlias grow well from seed, or can be purchased in flats at all nurseries. They make roots like the exhibition varieties, and they may be held over from year to year, if the gardener wants to go to the trouble.

Most nurseries also handle a good selection of standard dahlia roots in the spring. The nurseryman will assist the gardener in making the desired choices for size and color.

Seed catalogs have a section devoted to dahlia roots, and in them are listed some of the good rootmakers that have stood mass production over the years. Garden magazines carry ads from the dahlia specialists all over the United States and Holland, or names of

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companies issuing dahlia catalogs can be obtained from members of the San Diego County Dahlia Society.

Getting Acquainted

Better still, the average gardener can become a dahlia specialist by attending the society meetings and getting acquainted with other average gardeners who like dahlias just like himself.

Here is a list of the miniatures (under four inches) that grow well (and win at the shows) in San Diego: Jescot Tangerine, orange; Rothesay Superb, and Ruby Charm, red; Hazel Harper (originated by Mrs. George Harper of San Diego), pink; Gypsy Kiss, lavender and white variegated; Gadget, autumn.

Popular pompons here include Mimosa and Apropos, yellow; Mrs. J. Telfer and Little Willo, white; Zonnengoud and Gold Dust, autumn; Master Michael, and Fugi, orange; Hilde, Effect, and Pom of Poms, red; Crossfield Ebony, dark red; Betty Ann and Mrs. French, pink; Robert Holmes and Margaret Williams, lavender; Willo's Violet, purple, and Betty Malone, lavender and white bi-color.

A good selection of the florist sizes would include Aristocrat, and Doris Day, red; Mouney C, white; Yellow Elegance, yellow; Grace, Gerre Hoek, and Delicate Beauty, pink; Southern Beauty and Peach Blend, pink blends; and Lombart's Violet, purple.

Mediums

A good selection of mediums, up to eight inches, would include Florence Chadwick, white; First Lady and Maureen Connolly, yellow; Golden Autumn, autumn; Golden Heart, flame; Juanita, dark red; Nita, variegated purple on lavender; Nagel's Solidite, pink, and Iva Jean, white and red bi-color.

The big ones that grow well here and win prizes include the dark red, Mrs. Hester A. Pape, named for a member of the floral association who lives in La Jolla; Lula Pattie, white; Art Linkletter, yellow; Surprise, pink; Jane Lausche, lavender with white tips; Margaret Duross, autumn; Lavengro, lavender, and Mrs. Macdonald Quill, red and white bi-color.

You will find all of them at the shows, and all will do well with average good garden care.

LARRY SISK
San Diego County Dahlia Society

• ROSES

*Winners in hybrid teas
*Watch out for pests
*Good liquid fertilizer
*Soil dictates watering

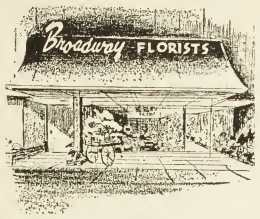
After my last column went to press two more Southern California rose shows were held. These were the Pacific Rose Society Show held in Brookside Park, Pasadena on May the 4th and 5th; and the San Gabriel Rose Society Show held in Rose Hills Memorial Park, Whittier on May 11th and 12th. Just as with the San Diego show, both of these were bigger and better than ever. Winning hybrid teas at these two shows were White Knight, Columbus Queen, Angel Wings and Living. Evidently Columbus Queen is sure to join the ranks of roses preferred for exhibition.

This is the time of the year when uncared-for roses begin to be infested with thrip, red spider, chewing insects, mildew and rust. Remember that dimethoate is a new systemic which is about the only remedy really effective against thrip. It is sold under the trade names of Cygon and Greenfield Spray, although I have seen no evidence of the latter in local garden supply stores. Use Cygon about once every three or four weeks diluted one teaspoonful to the gallon.

Acti-Dione (cyclohexamide) remains the remedy of choice for mildew, being a specific for this disease. Use once a week or so, oftener if necessary, but use only about one-fifth the recommended strength. Two teaspoonfuls per gallon is enough and will not burn the foliage in this concentration.

It is much better to prevent mildew and rust by frequent spraying with Acti-Dione than to try to cure an established infestation. There is no specific for rust although daily washing of the leaves and keeping a neat garden are good preventative measures. Cygon will also keep red spider and most other insects under control although a rose dust might be used in addition whenever larger chewing insects such as beetles become too numerous for comfort.

Any bare-root roses planted this Spring should now be far enough along to be nourished with a com-



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